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Defined Benefit vs. 401(k): The Returns for 2000-2002

Managing investment returns in a volatile stock market is always challenging How do rates of return differ between professiona managed and participant-managed funds? An important, related comparison is between returns for defined benefit plans, whicl are actively managed, and 401(k) plans, which are generally participant-managed This article presents results from a Watson Wyatt analysis of rates of return for defined benefit and defined contribution plans from 2000 to 2002, capturing the stock mark fall from grace

In 2003, we analyzed 1999 rates of return and reported the results in "Defined Benefit vs 401(k): An Updated Analysis" (see *Watson Wyatt Insider*, September 2003) In 2002, we compared returns for defined benefit and 401(k) plans for 1995 to 1998, reporting the results in "Defined Benefit vs 401(k) Returns: The Surprising Results" (see *Watson Wyatt Insider*, January 2002) previous studies, we had found that defined benefit plans generally attained higher returns than 401(k) plans But in our 2002 a 2003 studies, we found that, in the late 1990s, 401(k) plans were realizing higher returns than were defined benefit plans

This analysis of 2000-2002 returns for both plan types shows a reversal, suggesting that defined benefit plans outperform defin contribution plans during bear markets, or at least in bear markets that follow sustained, record-setting bull markets Defined benefit plans didn't soar quite as high as 401(k) plans did during the bull market, because their assets tended to be more broad diversified Most 401(k) plans were more heavily invested in equities The more conservative investment approach taken by defined benefit plans paid off when the market fell, and their diversified investments cushioned the hit

The analysis is based on financial and pension disclosures for the years 2000 to 2002 in recently released Form 5500 filings A previous studies comparing defined benefit and 401(k) investment returns, we calculated the average rate of return using the following formula:

$$\text{rate of return} = \frac{(2 \times \text{investment income})}{(\text{beginning balance assets} + \text{ending balance assets}) - \text{investment income}}$$

Comparisons for Sponsors of Both Plan Types

As in past studies, we included companies that sponsored one defined benefit plan and one 401(k) plan By limiting our analysi to these companies, we were able to create a sample of companies similar to the samples we used in our earlier studies This minimized the effects of company or employer characteristics on the results and allowed us to concentrate on differences in rat of return between the two retirement tools Table 1 shows the year-by-year rate of return comparison between defined benefit a 401(k) plans for 1990 to 2002

Table 1
Median Rates of Return for Defined Benefit and 401(k) Plans*

Year	Number of sponsors	Median return DB	Median return 401(k)	Difference in median returns
2002	2085	-8 43	-12 26	3 83
2001	2239	-3 82	-7 30	3 48
2000	2058	0 00	-4 28	4 28
1999	1472	11 08	16 09	-5 01
1998	2958	12 31	14 27	-1 96
1997	2931	16 47	17 32	-0 85
1996	3034	12 88	12 69	0 19
1995	3063	19 53	17 45	2 08
1994	3181	0 00	1 60	-1 60
1993	3303	8 10	7 90	0 20
1992	2543	7 60	7 60	0 00

1991	3448	15 00	12 30	2 70
1990	3598	5 70	5 80	-0 10
Average	2763	7 42	6 86	0 56

Source: Authors calculations from Form 5500 data
* Data for years before 2000 are from earlier analyses of Form 5500 data

In 1998 and 1999, 401(k) plans outearned defined benefit plans, but by the next year, their positions were reversed. In the year 2000 to 2002, the difference in returns changed from 5 percent in favor of 401(k) plans to 4 percent in favor of defined benefit plans. It is important to note that both defined benefit and 401(k) plans performed poorly in 2001 and 2002, earning negative returns for the first time since 1990, when this study began

Plan Size Makes a Difference

Larger plans have traditionally realized higher returns than smaller plans, because larger plans have access to a wider variety o investment options and, in the case of defined benefit plans, more investment expertise. As in the previous studies, we compar rates of return for the largest one-sixth, largest one-half and smallest one-sixth of the plans (based on asset size of the defined benefit plan) from 1995 to 2002

Table 2
Comparison of Median Returns by Plan Size*

Largest one-sixth of plans				
Year	**Number of plans**	**Defined benefit**	**401(k)**	**Difference**
1995	510	23 18	18 29	4 89
1996	504	14.3	12 83	1 47
1997	488	18 74	18 44	0 3
1998	493	13 68	14 7	-1 02
1999	244	13 11	16 08	-2 97
2000	342	-0 32	-2 99	2 67
2001	373	-4 10	-6 10	2 00
2002	346	-8 73	-11 21	2 47
Average	413	8 73	7 51	1 23
Largest one-half of plans				
Year	**Number of plans**	**Defined benefit**	**401(k)**	**Difference**
1995	1531	21 54	17 63	3 91
1996	1516	13 9	12 84	1 06
1997	1465	17 87	17 97	-0 1
1998	1479	13 37	14 62	-1 25
1999	736	11 87	15 32	-3 45
2000	1029	-0 32	-3 40	3 08
2001	1120	-3 94	-6 77	2 84
2002	1043	-8 60	-11 83	3 23
Average	1240	8 21	7 05	1 16
Smallest one-sixth of plans				
Year	**Number of plans**	**Defined benefit**	**401(k)**	**Difference**
1995	510	15 18	16 94	-1 76
1996	504	10 63	12 42	-1 80
1997	488	12 67	16 43	-3 76
1998	493	9 87	13 45	-3 58

1999	244	9 00	16.11	-7.12
2000	342	1 43	-5.17	6.60
2001	373	-3 51	-7.43	3 92
2002	346	-8 02	-12.33	4 31
Average	413	5.91	6 30	-0.40

* Plan assets in defined benefit plan are the measure for plan size
Source: Watson Wyatt Worldwide

Between 1995 and 1998, larger plans outperformed smaller plans, whether they were 401(k) or defined benefit plans In 1999, smaller 401(k) plans outperformed larger 401(k) plans, although larger defined benefit plans continued to outperform smaller plans For the years 2000 to 2002, larger 401(k) plans earned higher returns than smaller plans. The surprise in 2000 through 2002 was that, for the first time, smaller defined benefit plans outperformed larger defined benefit plans

Table 3 compares the distribution of the difference in median returns for 1999 to 2002.

Table 3
Distribution of Rate-of-Return Difference

Percentile Rank	DB minus 401(k) returns-1999	DB minus 401(k) returns-2000	DB minus 401(k) returns-2001	DB minus 401(k) returns-2002
75th	1 90	9 44	7 85	8.33
50th	-4.64	4 06	3 53	3 54
25th	-11 56	-0 98	-0.75	-0 46

Source: Watson Wyatt Worldwide

In the years 2000 through 2002, for at least 30 percent of the companies that sponsored both a 401(k) plan and a defined bene plan, the 401(k) plan earned higher returns This is in stark contrast to 1999, when at least 70 percent of sponsors of both a 40 plan and a defined benefit plan attained higher returns on their 401(k) plans For 25 percent of plan sponsors in 1999. their defined benefit plan outperformed their 401(k) plan by 1 9 percent. For 25 percent of plan sponsors in 2000, 2001 and 2002 the defined benefit plan earned at least 9.44 percent more in 2000, 7 85 percent more in 2001 and 8 33 percent more in 2002 than their 401(k) plan

When the 401(k) Is the Only Plan

One concern about looking at firms that sponsor both a defined benefit and a 401(k) plan is that the results could be skewed, because employees who participate in both types of plans might make more aggressive investment decisions than those who participate in only a 401(k) plan. So we identified employers that sponsored only a 401(k) plan and calculated their rates of retu from 2000 to 2002 Table 4 shows the results for the 2000-2002 period, as well as results for 1990 to 1999 The table also shov median rates of return for employers that offer both defined benefit and 401(k) plans

Table 4
Median Returns When the 401(k) Plan Is the Only Plan

Percentage Return						
Year	Number of sponsors	Median rate of return all sponsors	Median rate of return largest 1/6 of sponsors	Median rate of return largest 1/2 of sponsors	Median rate of return smallest 1/6 of sponsors	Median rate c return of sponsors w/ [and DB
2002	34002	-13 29	-12 62	-12 15	-14 83	-12 26
2001	33414	-8 50	-7 17	-7 87	-9 39	-7 30
2000	36844	-5 91	-4 17	-5 18	-7 48	-4.28
1999	23526	17.32	15 51	16 3	19 96	16 09
1998	27053	13.84	14 37	14 01	13 97	14 27
1997	24281	16 41	17 47	16 89	15 58	17 32

1996	21720	12 63	13 04	12 75	12 56	12 69
1995	19016	17 21	18 05	17 22	17 64	17 45
1994	15912	1 20	1 40	1.50	N/A	1 60
1993	15892	7 20	8 10	7 60	N/A	7 90
1992	12248	7 10	7 60	7 30	N/A	7 60
1991	18093	11 00	12 10	11 50	N/A	12 30
1990	16697	6 40	6 30	6 70	N/A	5 80
Average	22058	6 35	6 92	6 66	6 00	6 86

Source: Watson Wyatt Worldwide

For 2000 through 2002, among employers that sponsored only a 401(k) plan, larger plans performed better than smaller plans This was a departure from 1999, when, for the first time, smaller plans outperformed larger plans In terms of 401(k) returns, th results in 2000 through 2002 are more in line with the results from 1990 to 1998 This suggests that employees with both types plans achieve better returns in their 401(k) plans than those who have only a 401(k) plan

Conclusion

The widespread shift from traditional defined benefit plans to 401(k) plans over the past several years has prompted concerns about whether tomorrow's retirees will have enough retirement income. In a traditional defined benefit plan, the plan sponsor assumes the investment risk and the responsibility for providing retirement income, however long retirement may last. With 401 plans, it's up to employees to invest wisely and ensure that they have enough savings to last a lifetime. In the late 1990s, 401(k plans performed very well, even outperforming defined benefit plans from 1997 to 1999 But in 2000, 2001 and 2002, defined benefit plans outperformed 401(k) plans. Those years — 2000 through 2002 — were bad investment years for everyone, and b defined benefit and 401(k) plans did poorly Defined benefit plans did not fall as far as 401(k) plans, however, partly because th professionals who manage these funds have a fiduciary duty to diversify investments When the stock market was providing ve attractive returns, 401(k) plan participants may have over-invested in stocks When the S&P 500 started falling in 2000, stock-heavy 401(k) plans fell right along with the market

In terms of associating plan size with rates of return, 1999 was the first year in which smaller plans outperformed larger plans Over the period 2000 to 2002, however, larger plans earned higher returns than smaller plans, which is in line with rate-of-retur results from 1990 to 1998 Historically, larger plans offer more investment options Because participants in larger plans tend to have more diversified portfolios than do participants in smaller plans, they are not hit as hard by a market slump Interestingly, small defined benefit plans attained higher rates of return than larger defined benefit plans in 2000

For the years 2000 through 2002, employees who participated in both a defined benefit and a 401(k) plan realized better return their 401(k) plans than those who participated in only a 401(k) plan. In 1999, employees who had only a 401(k) plan attained higher returns These higher 1999 returns may have been because many employees at smaller tech companies had a high concentration of company stock in their plans, which delivered very high returns during that period This could also account for drastic decline in 401(k) plan assets in 2000, 2001 and 2002 as company stock often performed similarly to the rest of the mark during this period — poorly

The 2000-2002 results spell the end of the three-year trend in which 401(k) plans outperformed defined benefit plans Participa in 401(k) plans were too heavily invested in equities and in company stock. So they made out well at the market's peak, but the lost most of those gains when the market dropped so sharply in 2000 and 2001 and bottomed out in 2002 A lesson to be learn here is that 401(k) participants need to maintain a well-diversified portfolio, so they can weather the market's ups and downs m smoothly Employers can help by clearly communicating the benefits of diversification and other principals of sound investing tc participants

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